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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,497	03/01/2002	Marco Mariotti	3573-11	4863
23117	7590	08/03/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			ANGELO, CAROLINE J	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/009,497

Applicant(s)

MARIOTTI ET AL.

Examiner

Caroline J. Angelo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/01/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/13/01
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Italy on June 13<sup>th</sup>, 2000. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter.

### ***Drawings***

2. The drawings were received on March 1<sup>st</sup>, 2002. These drawings are acceptable.

### ***Specification***

3. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

4. The disclosure is objected to because of the following informalities: on page 1, line 2, "ooo@ooo" must be deleted.

### ***Claim Objections***

5. Claim 3 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. The claim should be revised to depend on either claim 1 or 2, rather than both. See MPEP § 608.01(n). Accordingly, the claim 3 not been further treated on the merits.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pan et al.

(US 5,920,596) in view of Sahlman et al. (WO 99/25104).

8. Pan discloses a system of phase and amplitude modulation (figure 1) of a single information flow (column 2, lines 55-65 and figure 1, element 24), in which a phase modulation in baseband (figure 1, element 28) and a frequency modulation (figure 1, element 26) are performed separately by using different portions of the same information flow (figure 1, elements 20 and 22) as a modulating signal. However, Pan is silent about whether the frequency modulated signal is in the radiofrequency range.

9. Sahlman discloses a transmitter system (figure 5) in which the output signal is frequency multiplied (page 7, lines 16-30 and figure 5, element 212) with an RF local oscillator signal (figure 5, element 210) to produce an RF output (page 7, lines 25-26).

10. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize RF frequency modulation as taught by Sahlman in the transmitter disclosed by Pan in order to generate wideband signals at higher frequency using less complex circuitry.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pan in view of Sahlman, and further in view of Chethik (US 5,237,292).

12. Pan in view of Sahlman discloses a system that meets all limitations of claim 2 including a modulation system wherein a standard digital phase modulation is

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implemented in baseband and the digital amplitude modulation is synchronous with the bit flow (column 6, lines 13-14). However, Pan is silent about the constellation formed by the phase and amplitude modulated signals.

13. In the same field of endeavor, however, Chethik discloses a system of modulation wherein the number of symbols or signals which form the constellation alphabet is increased by overlapping amplitude and phase modulated signals (column 3, lines 7-11 and figure 6).

14. It would have been obvious to one having ordinary skill in the art at the time of the invention to form a constellation of overlapping phase and amplitude modulated signals, as taught by Chethik, with the system taught by Pan and Sahlman because Chethik provides Pan and Sahlman with a system which is adaptive in response to a command to alter its modulated output.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pan in view of Sahlman, and further in view of Lods et al. (US 4,571,549).

16. Pan in view of Sahlman discloses a system that meets all limitations of claim 4, including a circuitry comprising in cascade a bit source (figure 1, element 22), and, in a single block, an oscillator and multiplier (figure 1, element 16) and a power amplifier (figure 1, element 18). However, Pan is silent about a voltage-controlled oscillator and a digital phase modulator.

17. In the same field of endeavor, however, Lods discloses a system including a circuitry comprising in cascade a bit source (figure 3, "data train"), digital phase modulator (figure 3, element 2) and a voltage-controlled oscillator (figure 3, element 63).

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18. It would have been obvious to one having ordinary skill in the art at the time of the invention to use a multiplier and power amplifier as taught by Pan because the system of Pan provides Lods with a simpler system which does not require a linear converter.

#### ***Other Prior Art Cited***

19. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

20. Kool et al. (US 5,903,609) discloses a transmission system (figure 1) having a phase modulator (figure 1, element 8) and multiplier (figure 1, element 18) in cascade with an oscillator (figure 1, element 6) and amplifier (figure 1, element 16). The system produces a constellation of amplitude- and phase-modulated symbols (figure 8).

21. Nakatsu et al. (US 5,535,244) discloses a modulation system producing a circular constellation of symbols with varying amplitudes (figures 2, 7, and 8).

22. Jeckeln et al. (US 6,072,364) discloses a transmitter producing a 16-QAM modulated signal with phase and amplitude components (column 8, lines 64-67 and figure 4).

23. Perrett et al. (US 6,018,275) discloses a circuitry consisting of a phase modulator (figure 3, element 39), a voltage-controlled oscillator (figure 3, element 34), and a power amplifier (figure 3, element 32) in cascade.

#### ***Conclusion***

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caroline Angelo whose telephone number is 571-272-

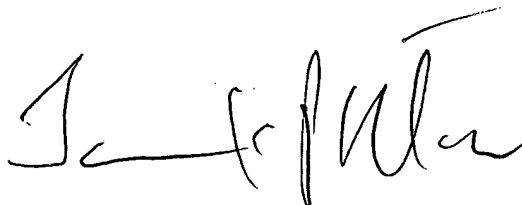
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8730. The examiner can normally be reached at 7:30 am - 4:00 pm Monday through Friday.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel, can be reached at 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CA

A handwritten signature in black ink, appearing to read 'Jay K. Patel', is written over a horizontal line.

JAY K. PATEL  
SUPERVISORY PATENT EXAMINER